In the Claims

Please cancel Claim 106. Please amend Claims 107, 108, 109, 112, 115, and 120. Amendments to the claims are indicated in the attached "Marked Up Version of Amendments" (pages ii - iii).

107. (Amended) A method of monitoring damage at a fastener comprising:

mounting an eddy-current sensor to a test substrate under the head of a fastener; and

sensing response of the test substrate to a magnetic field imposed by the eddy-current sensor.

108. (Amended) A method of monitoring damage at a fastener comprising:

mounting an eddy-current sensor to a structure near a fastener, the sensor being mounted between layers of the structure attached by the fastener;

and

sensing response of the test substrate to a magnetic field imposed by the eddy-current sensor.

109. (Amended) A method of monitoring damage at a fastener comprising:

mounting respective spatially periodic field eddy-current sensors to a test substrate at both ends of a fastener; and

sensing response of the test substrate to a magnetic field imposed by the eddy-current sensor.

112. (Amended) A method for monitoring damage at a fastener comprising:

mounting at least two eddy-current sensors on a test substrate around respective fasteners;

connecting drive and sense conductors of the eddy-current sensors with a single cable to a data acquisition system; and

sensing response of the test substrate to respective magnetic fields imposed by the eddy-current sensors.

115. (Amended) A method as claimed in Claim 161 where sense conductors of pairs of sensing elements are connected together to provide a differential measurement.

120. (Amended) A method for monitoring damage at a fastener comprising:

mounting an eddy-current sensor in a cylindrical support material shaped in the form of a washer;

mounting the cylindrical support to a test substrate under a fastener head; and

sensing response of the test substrate to a magnetic field imposed by the eddy-current sensor.

Please add new Claims 145-162.

145. (New) A method as claimed in Claim 107, where the sensor is a spatially periodic field eddy-current sensor.

146. (New) A method as claimed in Claim 107, where monitoring damage comprises performing fatigue testing.

147. (New) A method as claimed in Claim 108, where the sensor is a spatially periodic field eddy-current sensor.

148. (New) A method as claimed in Claim 108, where the structure is a test coupon.

149. (New) A method as claimed in Claim 108, where monitoring damage comprises fatigue testing.

150. (New) A method as claimed in Claim 108 where the eddy current sensor has at least one drive winding and at least one sense element.

151. (New) A method as claimed in Claim 150 further comprising calibrating each sense element by adjusting the response to an appropriate level.

152. (New) A method as claimed in Claim 151 where the calibration involves placing the sensor on the test material and measuring the response of each sense element.

153. (New) A method as claimed in Claim 152 where the calibration further involves a second response measurement for each sense element with a nonconductive material placed between the sensor and the test material.

154. (New) A method as claimed in Claim 152 where the calibration includes varying the temperature of the test material.

155. (New) A method as claimed in Claim 150, where the eddy current sensor has a periodic magnetic field produced by linear segments of the drive winding.

156. (New) A method as claimed in Claim 108 where the eddy current sensor has a magnetic field produced by a drive winding formed from concentric circles.

157. (New) A method as claimed in Claim 108 where the sensor is thin and conforms to the shape of the structure.

158. (New) A method as claimed in Claim 108 where the sensor is mounted using an adhesive.

159. (New) A method as claimed in Claim 108 where the sensor is mounted by pressing the sensor against the surface of the structure and using pressure to hold the sensor in place, the pressure being provided by an opposing surface whose shape matches the shape of the structure.